4°) $\int_{-\pi}^{\pi} \frac{\sin t}{t}\,dt = 2\int_{0}^{\pi} \frac{\sin t}{t}\,dt$.

$t \longmapsto \frac{\sin(t)}{t}$ définie sur $\mathbb{R}^*$

$0 \in [-\pi, \pi]$

faux

5°) $\int_{-1}^{1} \frac{x^4 \sin x}{\sqrt{1+x^2}}\,dt = 0$.

$$\int_{-1}^{1} \frac{u^4 \sin(u)}{\sqrt{1+u^2}}\,dt$$

$$= \frac{u^4 \sin(x)}{\sqrt{1+u^2}} \cdot \int_{-1}^{1} dt$$

$$= \frac{u^4 \cdot \sin(x)}{\sqrt{1+u^2}} \left(1-(-1)\right)$$

$$= \frac{2 \cdot u^4 \sin(x)}{\sqrt{1+u^2}}$$

faux